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ABSTRACT

Proceedings of a symposium which focused on issues related to nuclear weapons and arms control are presented. In addition to a list of participants (including both high school and college educators) and symposium schedule, summaries/highlights of symposium sessions are provided. These include summaries of three working groups which discussed educational methods and programs that could be developed, working with existing educational projects, to address the current situation in various aspects of society that are affected by the arms race. These groups, which focused on political, scientific/technological, and psychological/emotional issues, agreed on the need for value education and the need for people to enter into the decision-making process about nuclear technologies. Lists of barriers to introducing nuclear education in the formal high school and college curricula, in communities, and to the general student population are also provided, as well as general recommendations for dealing with them. A discussion of nuclear education goals, statement on the nature of nuclear war education, and a list of objectives and recommendations related to ways of continuing the communication begun at the symposium are included. (JN)

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symposium on

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"Instituting Nuclear Age Education: Towards A Cooperative Future"

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JANUARY 20-23, 1983
EMORY UNIVERSITY, ATLANTA GEORGIA

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INTRODUCTION

On January 20-23, 1983, forty leaders in the field of nuclear age education gathered at the Houston Mill House of Emory University, Atlanta. Participants were among the most prominent and innovative high school and college educators about nuclear weapons and arms control in the country. The meeting took place in the midst of an ice storm which sent the city into a panic. With this ample reminder that even the best made plans create only a veneer of control, we proceeded to discuss education for the nuclear age. An extremely dedicated staff from the Stipe Society at Emory University made it possible for the rest of us to think of the larger predicament of nuclear weapons. With equal dedication and an impressive degree of openness and consideration, the following discussions took place.

By many accounts the meeting was useful, even historic. As convenors we were pleased and amazed by the process which unfolded. It is an all too rare experience for people to open themselves up to question what they do and why. That openness is the key to the educational task ahead.

SYMPOSIUM PARTICIPANTS

Reverend Jim Antal	Executive Director, STOP Nuclear War
Shelly Berman	Coordinator, Boston Educators for Social Responsibility
Allan Brick	Professor of English, Hunter College
Barry Casper	Professor of Physics, Carleton College
Carole Chaet	Social Studies Coordinator, Cambridge Public Schools
James Cooney	Coordinator, Five College Project on Disarmament
Harmon Dunathan	Provost, Hobart and William Smith Colleges
John Fitton	Institute on War and Conscience, Santa Clara University
Pat Gleba	Consultant to San Diego School System
Natalie Goldring	Union of Concerned Scientists
Anne Gorsuch	Nuclear Education Project, Federation of American Scientists
Sandy Gottlieb	Director, United Campuses Against Nuclear War
Bailey Greene	Teacher, Pace Academy
Jon Gunnemann	Professor of Theology, Emory University
Carol Guyer	James C. Penney Foundation, Inc.
Carole Hahn	President, National Council for the Social Studies
George Hogenson	Professor, Yale School of Organization and Management
Marvin Kalkstein	Professor of Nuclear Chemistry and Science Policy
Don Lathrop	Professor of Philosophy, Berkshire Community College
Eric Markusen	Graduate Student in Sociology, University of Minnesota
Laurie Olsen	Citizens Policy Center
Lester Paldy	Dean, State University of New York, Stony Brook
Chris Rich	Creative Initiative
Dick Ringler	Professor of Scandinavian Studies, University of Wisconsin
Dietrich Schroeer	Professor of Physics, University of North Carolina
Robert Scott	Arms Control Association
Richard Scribner	Science and Public Policy Programs Manager, American Association for the Advancement of Science
Cindy Shannon	Program Coordinator, STOP Nuclear War
Roberta Snow	Research Program for the Study of Human Continuity, Harvard University
Jerry Spindel	Massachusetts Teachers Association
Peter Stein	Professor of Physics, Cornell University
Robert Stein	Director, The Forum Institute
Tony Wagner	Director, Educators for Social Responsibility
Grace Warnecke	Business Executives for National Security
Don Wells	Principal, Carolina Friends School
Bill Wickersham	Executive Director, World Federalist Association

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Michael Berger, International Conference Director
Lisa Heinz, ISP Center Assistant

National Nuclear Age Education Project

Fred Rose, Education Project Coordinator
Jim Flowers, Emory Symposium Coordinator
Emory University Stipe Society

SYMPOSIUM SCHEDULE

Friday, January 21 Nuclear Age Education: Where Are We?

Evening — Welcome and Introductions - Brief statements of people's expectations for the meeting and pressing topics people would like to discuss over the weekend.

Informal Discussions.

Saturday, January 22 Nuclear Age Education: What Needs To Be Done?

Morning — Issues Working Groups - Discussions of educational methods and programs that could be developed, working with existing educational projects, to address the current situation in various aspects of society that are affected by the arms race. The three working groups focused on Political, Scientific/Technological and Psychological/Emotional Issues.

Afternoon — Barriers to Institutionalizing Nuclear Education - Working groups discussed the institutional barriers that exist in high schools and colleges and the more informal barriers to motivating student and community interest.

Evening — Funding Discussion - Overview of the current status of funding for nuclear education and the disarmament community. Comments on the trends in thinking of the foundation community and the prospects for longterm support.

Sunday, January 23 Nuclear Age Education: Where Do We Go From Here?

Morning — Group Discussion of the various goals and assumptions of nuclear age education as practiced by symposium participants.

Afternoon — Proposals for ways to continue the communication and questioning process begun at this symposium. Also proposals for other forms of ongoing cooperation and collaboration.

SPECIAL ACKNOWLEDGEMENTS

Dr. Tom Bertrand, Secretary, Emory University
President James Laney, Emory University
Jean Robitscher, Conference Director, Emory University
Stipe Society, Emory University
Robin Wagner, ISP
The Max and Anna Levinson Foundation
The Field Foundation

ISSUES SESSIONS

Saturday morning was devoted to an exploration of the substantive issues which nuclear education should address. The perception of exactly what these issues are depends on how one understands the reasons the weapons exist. Clearly the nuclear problem must be confronted in immediate ways within the structure of present institutions. But a longer range objective must be to identify how current institutions might themselves be the problem. The three discussions on political, scientific/technological, and psychological/emotional issues all agreed on the need for value education, and the need for people to enter into the decisionmaking process about nuclear technologies.

POLITICAL ISSUES

The overall goal of education about nuclear weapons is human survival and continuity. The existence of these weapons has clarified our interdependence and the need to find ways of coexisting and cooperating on this planet. These are longstanding needs, dramatized and made more acute by the present destructive potential. To achieve the goal of survival, people must be educated in skills of democratic participation and decisionmaking. This education must instill values, create a sense of responsibility, enable students to think creatively and independently, and empower students to act. Schools are presently failing in these purposes.

Values are central to decisionmaking in a democratic society, though educators are often terrified of values because of the political choices and actions they imply. But values will always be implicit in education unless made explicit. The current lack of value education reflects a sense of nihilism in society. The paradox is to teach both a sense of justice and good as well as toleration of diverse views. Thus, education is not advocacy but the groundwork for democratic choice.

Redressing the nuclear threat through the democratic process necessitates changes in attitudes about ourselves and the world. People must learn to tolerate a certain ambiguity in understanding; that there is no truth, or at least no one individual or nation has access to *the* truth. Thus conflict and conflict resolution are opened to dialogue, and not simply a matter of right and wrong. Military force and diplomacy must be reevaluated as ways of dealing with conflict. The fundamental change is an expanded identity, going beyond self interest and nationalism. This entails both a multicultural perspective and an understanding of the interrelationship of people, nations and the environment.

Attitudes about peoples' role in society must make the change from self oriented privatism to social responsibility. The idea of responsibility has lost its meaning over the past 40 years, and an enriched view must be found. It is not that people should be made responsible, but they need to recognize that they are responsible and should act accordingly. Present day reliance on experts needs to be replaced with popular choice. There is no simple way to instill this sense of responsibility. Clearly teaching knowledge is not enough, for there is an incomprehensible gap between being informed about an issue and taking the step of participating in the decisionmaking process. Pedagogically we must recognize that doubts remain in many educators' minds about the validity of involvement as part of education. However, such goals are consistant with the idea of citizenship and liberal education.

One major ingredient to accepting responsibility is the recognition that one can have effect. People in general will not act without believing they can make a difference. Knowledge without this sense can lead to despair, yet empowerment is assisted by knowledge of the political process or other avenues for action. The history of social change teaches that change is slow, but individual impact is perceptible in a local community with potentially great effect.

Education of the type described above has to begin with people's present beliefs. Foremost in the public mind are the questions of whether more weapons make us more secure, the reasons for the overwhelming sense of powerlessness, and whether Russia is ahead in the arms race or trying to get ahead. These are questions that education must address.

PSYCHOLOGICAL/EMOTIONAL ISSUES

Attention to the psychological and emotional issues is essential for nuclear war education for several reasons. The psychological issues must be addressed in the classroom before discussing the scientific, political and economic questions. Otherwise a sense of fear and powerlessness inhibits the students' ability to digest the factual information. How students learn is as important as what they learn. Therefore, nuclear war education should provide the proper settings for dialogue and cooperation which encourage students to actively participate, reason and think critically. Finally, the study of the psychological aspects of this subject is in itself a substantive area for academic study.

Nuclear issues make special demands on students and teachers. In all of the following recommendations to meet these demands, age appropriateness is crucial. The following advice must be read with different emphasis depending on student age.

The omnipresence of the many psychological aspects that may arise need to be clear to students and teachers. Attitudes and emotions of fear and hope need to be perpetual concerns in the classroom. The expression of fears must be a legitimate part of addressing nuclear issues. Students

need opportunities early on to present their concerns and thinking, perhaps by telling nuclear "stories", keeping journals, being in small groups, or having sessions where everyone speaks. Such expressive sessions should be repeated periodically in addition to a regular and brief time for self expression in each class. Other tensions, (social, racial, etc.) need to be tended to before or at least concurrently with nuclear education courses.

A proper atmosphere in the classroom is essential to nuclear education. Students need to feel support for their emotions and ideas from the teacher and other students. Sharing among students can provide a network for support within the classroom as well as a sense of interdependence. The overall tone of all efforts should be inviting, uplifting and light, fostering the sense that students can act to remedy the situation and generate a more peaceful world. Toward this end, projects in the community must be made available to students.

The attitude that a teacher brings to this teaching should reflect a common search with students for understanding. The thrust of the course must be made explicit, particularly whether it is directed towards an anti-nuclear position or towards a more open ended conclusion. Emotional and intellectual demands on the instructor as well as students should also be clarified early on. It will fall to the teacher to provide perspective for students and to nurture humor in the process of teaching. Finally, sensitivity towards students' needs is essential to creating the proper atmosphere.

Several techniques have been found helpful towards implementing the above. Outside speakers and films enrich classes and provide examples of persons working towards a goal. Having students frequently make or do something is therapeutic in its concreteness. Non-verbal experiences may be helpful techniques to facilitate emotional expression. In addition, a focus on economic aspects of nuclear weapons is a useful tool for revealing some profound issues. Finally, clarity about the short-term, i.e. stopping a nuclear war, and long-term, i.e. peace, goals makes teaching more effective.

Psychological subject matter, as opposed to our own psychological and emotional responses to learning about nuclear issues, is part of the substance that education must address. Without having time to explore these issues, it was recognized that surrounding the entire nuclear issue lurks the notion that people need to change some of their habits of thinking and responding. Some of this is addressed in the educational process advocated above.

SCIENTIFIC/TECHNOLOGICAL ISSUES

The discussion of scientific and technological issues focused on the broader context of education in modern, technological society. This more general conversation reflected the overall perception that nuclear weapons can only be understood within the bigger social picture.

The disjunction between the minority of technical professionals and the wider populace was seen as a major source of difficulties. Science professionals are constituted as an elite, even a fraternity in the case of professions such as physics, which is technically highly competent but generally illiterate in terms of broader culture. In contrast, the overwhelming majority of technically uneducated people is intimidated by science and defers to the technical experts. This points to the need for both general science literacy and broader cultural literacy.

Beyond these knowledge divisions in society, the entire population lacks a sense of responsibility and values about scientific and technological developments. This separation of knowledge and values, in addition to the division between scientist and layperson, is supported by the belief in scientific objectivity. Without exploring this concept, it was agreed that the value content and social impact of science must be part of a general education in science. Ignorance in this realm has negative consequences which put into question the "neutral" or "objective" nature of science.

During the late 1950's a great emphasis was placed on creating technical professionals. This resulted in the early tracking of students into technical versus non-technical programs. Science education became highly competetive so that science students, from very early on in their education up through graduate and professional work, are pressured to maintain a narrow focus. Science courses for scientists rarely incorporate the social impacts of science or the technologies resulting from this science. Courses that do bring in broader issues are usually designed for non-majors, often as a substitute for technical courses. Therefore, the practice of science is never placed in a philosophical or historical framework. While this trend was seen as breaking down in the 1970's, it seems to be reemerging again.

The group made a set of recommendations which would address the above mentioned problems at the elementary/secondary level, in college humanities, and in professional education.

It was agreed that a major task of early education should be to nurture critical thinking and to instill a sense of values and ethical choice. It was noted that the failure of schools to do this is not due to teachers' inadequacies but to their perception that society wants them to teach mechanical skills. Education is never value free, and therefore students must learn to think critically and not simply to absorb a particular set of values. This critical, analytic thought is essential to doing science, and so the failure of schools to teach this also impairs technical education.

In terms of improving science education in high schools, the university was seen as playing an important role. There must be incentives and obligations for professionals to provide training and assistance to high school teachers. Since these have not been priorities at the university, such programs have failed to be sustained. Within the high school, it must become part of the role of teachers in all disciplines to convey technical literacy, as it is for all teachers to teach reading skills.

For college humanities programs, interdisciplinary courses are necessary to bring together issues in science and values. Such courses should teach technology assessment, including evaluation of policy and social implications. In this regard the history of science and technology are useful. This history is well presented in the form of case studies that are cautionary tales for the present and future.

Historically, problems arise when scientists are not farsighted enough about the technological outcomes of science. Long-term thinking, then, must focus both on science and technology, which have been inappropriately separated. And in some way, critics of science must become part of science education as are critics in art and literature. It was recognized that faculty resist these kinds of interdisciplinary programs because they don't wish to give up their prestige in their narrow disciplines. Also, there is no one in the university trained to teach such encompassing courses.

Finally, recommendations were made for professional education. The idea of objectivity must be examined in the classroom and in the development of science. The boundaries between science, ethics and social education must be clarified. Rewards and positions must be made for scientists who provide social services, especially in anticipation of the coming glut of trained scientists. To further these ends, a resolution was drafted by Richard Scribner and endorsed by the group to be taken to the American Physical Society and possibly other professional organizations. (See Appendix I for the resolution.)

One further topic of discussion was the role that scientists can play in controlling the arms race. Besides the refusal to work on military projects, scientists can use their prestige as technical experts to have political impact both within and outside government. It was debated whether this impact was greater as an "insider" or an "outsider." Both certainly have a role to play. Credentials and experience within government institutions are valuable for credibility in the arms control community. But there was disagreement about how useful official arms control efforts are. Another concern was expressed over the consequences of critical experts removing themselves from decisionmaking institutions.

BARRIERS TO DEVELOPING NUCLEAR EDUCATION

Working groups Saturday afternoon focused on the barriers to introducing nuclear education in the formal high school and college curricula, in communities and to the general student population. Since there was no time at the meeting to explore each point in detail, the barriers are simply listed here along with general recommendations for dealing with them resulting from people's past experiences.

Note: It is important to recognize the validity of concerns underlying the resistance to nuclear education. Acknowledging the difficulty of the issues and the legitimacy of varying points of views is helpful in approaching the barriers which exist.

BARRIERS IN THE UNIVERSITY

There is no established academic department or discipline to study nuclear issues. This makes it difficult to get resources. Also no rewards or incentives exist for teaching nuclear issues.

There is a lack of definition or agreement about what nuclear education is.

Nuclear issues transcend the limits of any one course or discipline.

Interdisciplinary courses are desirable but time consuming and often unrewarding.

It is not clear who is qualified to teach nuclear issues.

Liberal arts education could incorporate nuclear issues, but the trend against such general education makes administrators reluctant.

Humanists don't have the time to master technical material which is part of teaching nuclear issues. They may see technical aspects as unimportant.

Scientists are often uncomfortable teaching issues with ethical and moral components given their usual stance of objectivity.

Students and teachers find nuclear issues psychologically disturbing.

Recommendations

Accurate labelling of courses can avoid many difficulties and barriers.

Work within established disciplines to develop relevant programs.

Involve outside people from many disciplines in courses. This forces them to look into nuclear issues and may lead to interdisciplinary courses.

Deal with psychological issues first in a course to avoid later problems.

Recognize the tensions between desired solutions and the process necessary to reach these ends. This can relieve much frustration.

An inter-university newsletter can serve to break down barriers.

BARRIERS IN THE HIGH SCHOOLS

Fear that teaching nuclear issues will be advocacy or politicizing.

Recommendations:

Explain that this issue is no more political than racism which has become part of the curriculum, but the ramifications for survival are greater.

Avoid the problem by:

Bringing many people into the development of the curriculum.
Maintaining a balanced curriculum.
Developing free thinking as a goal.
Choosing an approach appropriate to the prevailing sentiment.
Stressing the legitimacy of this education in itself.

This is a difficult subject to teach because the subject matter is not well defined in any one discipline. It is not included in the textbooks or teachers' training. Furthermore, challenging the views of experts is not the usual job of high school teachers.

Recommendations:

Stress the importance of teaching nuclear issues.

Make available success stories about other programs.

Emphasize that the unknowns exist for the decisionmakers in Washington as well as for us.

Explain how nuclear education is a way of teaching important decisionmaking skills.

Controversy can be the source of positive dialogue, don't fear it.

Teachers and communities which initially resist nuclear education often teach it the best later.

Outside support is available through various organizations.

Ways of networking to support teachers are important and need to occur.

Make sure efforts are publicized positively to the community.

Developing nuclear education programs can be uplifting. This excitement can infuse the entire educational endeavor.

Endorse the view that education for responsibility is valid.

Teachers fear being fired or blacklisted.

Recommendation:

Find ways of freeing teachers from their fears of losing their jobs. With this done, teachers will themselves respond to the need for education for survival.

Fear of the Russians.

Fear of taking responsibility for the future.

Nuclear issues are not fun or entertaining.

Inertia in the schools and among parents.

No support from the state or boards of education.

BARRIERS TO DEVELOPING STUDENT INTEREST

No rewards or incentives exist for students to become involved or interested. Students are preoccupied with future jobs, and few possibilities exist in the field.

Students have very little formal influence within institutions in society.

Access to mass media is limited.

Students have little money.

Political institutions are closed or unresponsive to young people.

There is a perceived lack of opportunities to be involved.

Powerlessness is an overriding sentiment.

Students don't know how to get involved.

People are often fatalistic about nuclear issues.

Political issues are not presented in compelling ways.

Campus politics is too serious to attract most people.

Issues are not seen as relevant to people's lives.

Young people seek identity and community support which are often missing from political activities.

Nuclear issues are not accessible to many people.

Few role models for involvement are present within the general institutional apathy.

Students are not taught group skills necessary for involvement.

Political activity is generally discouraged by schools, family and peers.

Schools emphasize knowledge and usually fear involvement.

College focuses on developing independence not responsibility.

The commitment being sought from students is often undefined and imagined to be too great.

Popularization of the nuclear issue leads to more polarization, so new programs become harder to develop.

Recommendations

Ask compelling questions such as who gave the government the right to threaten nuclear war?

Define the commitment being sought from people. Don't ask people to do what they feel they can't.

Present information about the decisionmaking process. People are generally ignorant of this.

Establish forms of reward for student involvement such as scholarships and prizes.

Make available continuing forms of involvement such as internships.

Artistic and visual materials are useful but may be negative. These must be balanced out.

Engage people in actions beyond the usual lectures. Provide suggestions.

Develop ways for students to reach out to other schools and the community.

Develop a network. Students are excited by an organization that connects them with other students doing similar activities.

Do a continuous series of events to maintain interest.

Levity and lightness are essential.

BARRIERS TO COMMUNITY EDUCATION

Psychological and personal -

Denial of the problem because of its magnitude and threat.

Lack of a sense of responsibility about the issue.

Limited vision of the problem and possible solutions.

Failure to integrate individual identity with broader world.

Apathy.

Sense of powerlessness to have any impact on the problem.

Lack of autonomy in people's thinking and actions.

Social and political -

Lack of credibility of local advocates.

Fear of Russia as the enemy and militant responses to this.

Sense of it being unpatriotic to question defense policies.

Confusion due to opposing experts.

Lack of access to the decisionmaking process.

Ignorance of the decisionmaking process.

Economic -

Economic necessity doesn't allow the time or stability to question.

Other interest groups have greater access to resources and power.

Recommendations

Do general media promotion to unite people's efforts, make the issue respectible, and enhance credibility of the issue.

Work on the basis of immediate self interest. Crisis relocation studies in communities help people recognize their safety interests and events like the Jobs with Peace week enhance understanding of economic interests.

Work with existing local organizations: churches, labor, civic, education...

THE GOALS OF NUCLEAR EDUCATION

In the course of the weekend's discussions it became increasingly clear that participants held differing views about the underlying purpose of their educational work. These differences are reflected in the kinds of programs people develop and the methods used in teaching. It took until Sunday morning for people to feel comfortable enough with each other to articulate their concerns about each other's assumptions.

The issues which arose are indicative of longstanding debates within the educational community. There will always be diverse perspectives about methodology appropriate to nuclear education, and this in some ways reflects a strength, given the complexity and variety of issues and situations to be addressed. Yet clarity in our assumptions and their implications is essential to sustain a long-term educational process, to comprehend the impact of nuclear education on students, and to enable public understanding and acceptance of this education.

In a very general way, the prevailing views of the underlying purpose of nuclear education can be distinguished as: the teaching of skills for democratic citizenry versus the teaching of information or knowledge.

Those who emphasized citizenry had a variety of ways of approaching their education. One approach is to teach creative and critical thought processes so students will learn to question for themselves and seek their own answers. This entails a major emphasis on exploring the assumptions of all perspectives, including your own. Value education is another approach, where it is the task of education to instill the universal values underlying not just our society but our entire civilization. These values include overcoming self centeredness, the power of idealism, moral courage, and the ability to envision a better world. The idea of empowerment as the purpose of education was voiced many times, referring to both the political will and the ability to act. All of these approaches hope to develop a sense of social responsibility in students and emphasize the learning process itself.

The alternative perspective was that nuclear education is intended to impart knowledge about this very complex and multifaceted problem. The ignorance which prevails is both a matter of information not being conveyed and a reflection of the degree to which the complex issues surrounding nuclear weapons are not understood. From this perspective, courses have been developed which present various sides of the issue. The presentation of material is done as objectively as possible, bringing in psychological, ethical and political issues as part of the material to be studied.

The "knowledge" versus "responsibility" orientations are not necessarily exclusive and may represent a tension more than a disagreement. All present could agree that the schools have failed to do their part in educating people, but responding to this lack raises many questions. We don't know how nuclear weapons are effecting students,

although they clearly have a powerful impact. Given the lack of experience in the field, it is also not clear what the impact on students will be of various educational experiences. Some people expressed serious doubts about the different approaches being pursued, the assumptions behind them, and their effects on students.

Everyone agreed to the general principle of education for democracy, but not all agreed that this was what its proponents were doing. Some feared that what was really intended was transformation of society through education, or that education was being used as a forum for advocacy. If so, this must be made explicit so it can be analyzed. Educational institutions will not allow advocacy, and this may in the long run detract from the overall effort. In addition, teaching a moral perspective which villifies the institutions in which decisions are being made may have the negative effect of causing critical and moral people to remain outside these institutions. This would leave decisions to the least moral.

Doubts also arose about those doing education for knowledge. Many who emphasized responsibility over knowledge believe that education always has values in it. The methods and process of education is political, implicitly if not explicitly. Lack of sensitivity to the classroom format and teaching methods is destructive to students and has lead to a population devoid of the basic attitudes necessary for democracy. If the constitution of the United States were put to a vote today, it was feared that it would not be endorsed as a consequence of our present education. One should not fear or deny values but state them openly for all to evaluate. Otherwise students don't learn consciously to make choices. In another way, the emphasis on the complexity of nuclear issues creates a sense of powerlessness in people who then defer to the knowledge of experts.

To an extent the different views of education reflect the institutional differences between high schools and colleges. In some ways "high schools teach students, while universities teach materials." There is clearly a greater knowledge component to university education.

A further institutional basis for disagreement is the difference between science and humanities education. Scientists are much more immersed in knowledge education than in the learning process or values. It was interesting to note that many of the leaders in the nuclear education field in colleges are natural scientists and especially physicists, while the high school leaders are largely from social studies and humanities. Finally, to some extent differences reflect a long-term versus short-term perspective about the arms race. Immediate decisions call for knowledge while long-term decisions call for a responsible population.

Nothing was resolved in this discussion, but assumptions began to be aired and people began to understand the wide range of activities included in "nuclear education." The conversation has just begun. It may be that education could encompass all the various goals listed above. Perhaps some of these goals have dangerous or destructive implications. It may be that education as currently constituted is unable to serve the purposes required. And possibly these different ends will prove to be contradictory. Whatever the case, it was clear that the dialogue must be continued.

NUCLEAR WAR EDUCATION SUMMARY

Dick Scribner

Nuclear War Education:

-- is broad based formal and nonformal education for both children and adults embodying contributions from all disciplines and professions;

-- uses appropriate techniques to inform students about all sides of questions related to the threat of nuclear war;

-- seeks to help students question assumptions regarding issues involved in our current nuclear weapons situation; and

-- in the best academic standards, seeks to increase all people's critical thinking, but

-- also includes incorporation of strongly held ethical beliefs and other views which should be clearly labeled as such.

It is essential for informed decision making and political action.

It is not

-- using deliberately biased information without appropriate qualification

-- teaching which prevents all points of view from being considered for their validity and application to our complex and interdependent world.

TOWARDS A COOPERATIVE FUTURE

Objectives for continued communication -

To establish dialogue within the nuclear education field:

- To define the purpose of nuclear education.
- To understand the different educational assumptions in the field.
- To understand the impact of this education on students and society.
- To understand the education taking place at different age levels and in different disciplines.

To establish dialogue with our constituencies, be they students, teachers, parents, administrators, or the general public.

To broaden the discussion to include people not represented at this symposium.

To exchange and distribute materials.

To rationalize the field to avoid redundancies and competition.

To create ongoing dialogue with people in home areas.

Recommendations -

A series of recommendations was made to continue the dialogue and communication begun at this symposium. ISP committed itself to exploring how this could best be done and to facilitating the process.

- A specific commitment was made by ISP to convene regional meetings replicating the diversity at this meeting. These meetings would continue to explore the assumptions behind nuclear education and work towards resolving or at least reconciling the various tensions.
- For the purpose of continuing communication within the nuclear education community, ISP agreed to collect and distribute a list of addresses of groups and projects active in the field.

Recommendations Continued -

- Convene regular national meetings like this one to establish personal contacts.

- Develop a grid clarifying who is doing what, where and how.

- Pursue questions and discussions about issues in newsletters. (Possibly the Federation of American Scientists' Countdown)

- Send outcomes of the meeting to college administrators.

- Regularize a process of informal reference of people to each other.

- Participate in the American Association for the Advancement of Science's annual meetings.

Beyond communication, participants at the symposium recognized the need for cooperation and coordination, particularly in the realm of fundraising and management. Student Pugwash agreed to explore ways of conducting this cooperation.

- People agreed that it is important for nuclear educators to clarify our needs and priorities to the funding community as well as to share funding information among ourselves.

- A letter will be written and distributed to funders following the meeting explaining the need for funding ongoing communication among persons and groups active in nuclear education.

- A conference for funders should be convened to present our concerns, needs and goals.

- A compendium surveying the educational community should be generated to let funders know what is taking place.

REFLECTIONS

The Emory Symposium was convened to address perceived needs within the community of educators addressing issues of nuclear weapons and arms control. These needs were thought to be of two distinct types. The seemingly simpler need was for coordination and cooperation among those who have committed themselves to providing nuclear education. This seemed like a superficial matter. The other was substantive and had to do with ISP Director Greg Gross's initial purpose for convening the symposium: to explore the issues surrounding nuclear education, recognizing our perspective that this education must incorporate a wide variety of disciplines and perspectives if it is going to address the deeper roots of the arms race.

In modifying our initial symposium plans to focus on organization and coordination, we had intended to maintain the substantive exploration by bringing together a group from a broad range of backgrounds and views. But we recognized that these issues of content are too complex to address in a weekend and must become part of the ongoing explorations of people in their home locations. What we could hope for was the establishment of an ongoing mechanism for communicating among ourselves and for raising persistent educational, political and organizational questions.

What we found is that there is a degree of cooperation that could take place given a means for communication. Much individual networking occured at the symposium as we knew it would. Only a small fraction of the results of this have become known to us.

But in many ways the lack of cooperation is indicative of deeper differences in understandings, goals and motivations among those addressing nuclear issues. By bringing people together to discuss cooperating and communicating, we unexpectingly created a means for exploring the deepest assumptions and substantive issues surrounding nuclear education. The result was a critical and self critical process not provided elsewhere. The mutual respect demanded by the accomplishments of participants meant that the differences present couldn't be ignored easily. Though difficult, a process of questioning the effects of nuclear education on students and society, the assumptions behind this education, the overall purpose of this effort and the nature of the problems being addressed was begun. We found from the symposium that, to a large degree, fulfilling the need for cooperation and communication is identical to exploring the substance of this education.

In spite of the many differences, there were some basic perspectives shared by all present. Everyone seemed to agree that educational institutions have failed to prepare students to face the nuclear age. Some educators identified this failure as one of not teaching critical and creative thinking and the will to act, while others attribute the failure to a lack of knowledge transfer to students. Of course this is not a rigid division and reflects somewhat the nature of the institutions and disciplines involved in the educational process.

There was also general agreement that the phenomenon of nuclear weapons is something that goes beyond the immediate confines of nuclear technology. What exactly these further causes and dimensions of the nuclear phenomenon are is not agreed upon. Yet in the final analysis, most participants seemed willing to recognize the moral, institutional, and psychological dimensions of the subject, the complexity of teaching and understanding the phenomenon, and a connection between the persistence of the problem and the lack of education. Discussion of the barriers that need to be overcome to have educational institutions address nuclear issues focused in all cases, on broader social, educational and political conditions beyond the immediate presence of the weapons themselves.

It is interesting to consider whether a further exploration into the diverse perspectives voiced on the purposes and methods for teaching nuclear education would eventually provide some common agreement. It is conceivable that such a common understanding could be provided by an examination into why education has failed and what the deeper causes of the arms race are. It may be that the disagreements that surfaced reflect differences in the institutions in which people work and the different age groups being addressed. More importantly, I would propose that the differences arising at Emory go to the heart of the nuclear age: the separation of knowledge from process and values. This separation is built into our institutions, and we experience it in our everyday lives. Coming to terms with these differences is essential to finding a means for emerging from the dilemmas that propel the arms race and that face our modern society.

APPENDIX I

DRAFT: RESOLUTION FOR DISCUSSION ONLY

A Proposed Resolution by The American Phsycial Society

Draft Resolution :

Whereas the research, publications, teaching, consulting and public activities of physicists have wide-ranging ethical, practical, and political implications;

Whereas physicists' own understanding of such implications in critical national security areas of weapon development, security planning, arms control and reductions, and governmental and public understanding of weapons effects and limitations, etc. will importantly inform their teaching, enhance their professional, advisory, and public roles, and perhaps encourage broader perspectives at the graduate and professional levels; and

Whereas it is no less true that physicists' understanding of such implications in other broad areas such as physics and ethical values, physicists and professional behavior, and scientists and technologists as citizens, as well as their interaction with humanistic and social science disciplines in these areas will enrich not only their teaching, but also many of their other endeavors;

Therefore, The American Physical Society urges all college and university Departments of Physics to include in their undergraduate curriculum for physicists a course of "Ethical, Social, and Professional Issues for Physicists,"

Furthermore, we recommend that such a course be incorporated early in the undergraduate program, be developed as an interdisciplinary course and involve, if possible, contributions from relevant disciplines and professions from academic, industrial, and the public sectors.

To be passed by the American Physical Society Council, carried in the A.P.S. Bulletin, and distributed to all Departments of Physics.

January 22, 1983
Emory University
International Student Pugwash
Symposium on Instituting
Nuclear Age Education:
Towards a Cooperative Future

R.A. Scribner